

## Circular by James C. Watson, February 25, 1879

**[B. 6 79.] New York Mutual Life Building, Boston, Feb. 25, 1879. The Bell Telephone Company**

*Respectfully invites your attention to the following letter from Prof. JAMES C. WATSON, of the Michigan University, who was one of the Judges at the International Exhibition at Philadelphia. This letter was first published in the "Nature" of Dec. 5 th:*

I HAVE just read an article in "Nature," vol. xviii. p. 698, on the history of the speaking telephone, which contains an erroneous statement of facts which happen to be within my own knowledge; so that, in the interest of a truthful history of this discovery, it is incumbent upon me to make a brief statement in regard to it.

I had the honour to be one of the judges at the International Exhibition at Philadelphia, and of the group to whom was confided the examination of instruments of research and precision. In the performance of my official duty I took part in the experiments which first brought the speaking telephone to the notice of the scientific world. Prof. Bell and Mr. Elisha Gray were both exhibitors at that Exhibition. Mr. Gray's apparatus was conspicuously shown near one of the main aisles, with the exhibit of the Western Electric Company, while Prof. Bell's was in a side room in one of the galleries, as a part of the Massachusetts' educational exhibit. About the middle of June, 1876, Prof. Bell came to Philadelphia to give personal explanations in reference to his apparatus, and before any public exhibition was made he stated to me in detail the character of his inventions. He was working at two independent things, the one the multiple telegraph by means of transmitted musical notes, the other the transmission of articulate speech over long distances. I told him that I was present in May, 1874, at the rooms of Prof. Henry, in the Smithsonian Institution, when Mr. Elisha Gray exhibited to us an apparatus for the electric transmission of musical sounds, and I asked him whether his first invention was similar.

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He said there was some similarity, although each had worked independently, and that there was a dispute as to the priority of invention. While sanguine as to practical results from his multiple telegraph, his great invention was the speaking telephone, which he believed he had discovered, and in respect to which there was no rival claimant. He said the idea came to him from some of the suggestions in respect to sound vibrations made by Helmholtz, and that he had succeeded, after patient research, in constructing an instrument which would transmit articulate speech. To this invention he desired to direct the attention of the judges.

The experiments with the telephones had to be made when the Exhibition was closed to the public, and the first experiments were made by Sir William Thomson and others on Sunday, June 18 or 25 — I do not now remember upon which of these two dates. Their Majesties the Emperor and Empress of Brazil were present at these experiments. Attention was first given to Mr. Gray, and he gave a lengthy account of his experiments, which had resulted in the perfected apparatus which he then exhibited. He gave an explanation of his various instruments in chronological order, and conducted some very entertaining experiments as he proceeded in his discourse. The object which he had in view was to send many messages simultaneously over the same wire by using sending and receiving instruments of different musical notes.

The greater part of the day was given to Mr. Gray, so that insufficient time remained for satisfactory trial of Prof. Bell's apparatus. The judges and the distinguished visitors present did, however, proceed to the Massachusetts gallery, and Prof. Bell explained briefly his two inventions, and some experiments were made with his speaking telephone, enough to excite the curiosity of those present in the highest degree. The results were so at variance with the views hitherto received that it was determined by my distinguished colleague, Sir William Thomson, to make other experiments, in which I took part. These experiments were made two or three days later, in the building known as the Judges' Pavilion, in the evening, after visitors had left the grounds. Prof. Bell had returned to Boston, and was not present at this trial of his apparatus. It was brought over to the judges' pavilion, at

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my request, by Mr. Hubbard, one of the officers in charge of the Massachusetts exhibit, and the experiments were made by Sir William Thomson and myself. Every precaution was taken to make an impartial test. I was at the transmitting instrument which was placed out of doors at a distant part of the building, and Sir William Thomson was at the receiving instrument in a distant room in the building. After some experiments, to find the pitch of voice which would suit the vibrating membrane then used, I received word by messenger from Sir William that he could then hear distinctly, and accordingly the pitch of voice then used was maintained in the subsequent trials. I held in my hand a copy of the *New York Daily Tribune*, and I began to read to him items from its news summary, and soon the messenger came to tell me that the messages were heard distinctly at the other end. The longest message which I sent was the following from that paper: "The Americans of London have made arrangements to celebrate the coming Fourth of July," and the messenger brought me back from Sir William Thomson the exact repetition of the message. Thereupon we exchanged places, and I could not only hear distinctly the utterances of my colleague, but I could even distinguish the ictus of his voice. The results convinced both of us that Prof. Bell had made a wonderful discovery, and that its complete development would follow in the near future.

The news of these successful experiments soon circulated freely, and the day following, or possibly two days afterwards, Mr Gray came to me and inquired whether the reports of our success with Bell's telephone were correct; and upon receiving from me an affirmative reply, he said that it was impossible that we had been deceived in some way, that the transmission was by actual metallic contact through the wire, and that it was, to use his own words, "nothing more than the old lover's telegraph." In reply I said to him that we had taken every possible precaution against error, that we were both convinced of the reality of Bell's claims, and that Sir William Thomson would report to that effect. He persisted in his statement that the result was impossible, and that we must have been deceived in some way or other.

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After having had direct knowledge of Mr. Gray's views at that time, I must confess to some astonishment at his claim now made that he anticipated Mr. Bell in the invention of the speaking telephone. Several months ago I saw an article in *Scribner's Magazine*, by Mr. Prescott, in which, while no direct assertion was made that Mr. Gray was the first inventor, there were illustrations given to show the development of the invention in chronological order, and Mr. Gray's instrument was there given priority. I had it in mind then to write a note to Mr. Prescott upon this subject, but I feared that there might be unpleasant controversies over the patents, and the claim of Mr. Gray being rather indefinitely stated, I held my peace. But now that the error appears to be taking root, I have felt it to be my duty to make the statements above given. I have before me a letter from Mr. Bell, dated at Boston, Wednesday, June 28, 1876, and directed to me at Philadelphia, in which he gives diagrams showing how we might arrange the apparatus to transmit articulate speech, as he believed, from Boston to Philadelphia, and proposing experiments to that end if the judges should so desire.

In conclusion, I ought to state further, that after Sir William Thomson's address at Glasgow had brought the telephone into notoriety, Mr. Gray, whose instruments had also been called telephones, gave a public exhibition, in Chicago, I think, and in the report of his lecture which I read, he never once alluded to Bell's invention. His discourse was then, as at Philadelphia, before the judges, solely in reference to the musical telephone. In fact, the newspapers had to take pains to inform the public that Mr. Gray's invention must not be confounded with Mr. Bell's, to which Sir William Thomson had referred. You will imagine, then, the surprise of the judges who examined these inventions particularly at Philadelphia in 1876, and heard the personal explanations made by the inventors, to be told now that Gray had already invented the speaking telephone, when all his statements then made show directly to the contrary.

JAMES C. WATSON.

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*Ann Arbor, Mich., November 18, 1878.*